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The Bonn text-book.

WE have scarcely noticed the appearance of the translation of the second German edition of the Bonn text-book before the third edition is received.² Few books have won for themselves such instantaneous and universal approbation. This welcome, the authors feel, has put them under obligation to maintain the work abreast of the progress of botanical science. Yielding to the frequently expressed wish for references to the most important literature, they have included such in this edition. The references are brought together at the close of the volume, exceeding a thousand in number, as we estimate. This is a valuable addition.

The other improvements, besides some changes in the text of minor importance, consist in the replacing of many of the older illustrations by new ones, and the increase in the number of the colored figures to more than double that in previous editions. They now include illustrations not only of the poisonous plants but also the most important official plants of the pharmacopœia. The utility of these figures to foreigners is small, and doubtful, we think, even for medical and pharmacy students of Germany.—C. R. B.

Van Tieghem's "Éléments de Botanique."

THE appearance of a third edition³ of this work is sufficient evidence of its usefulness. The first volume (pp. 559, with 235 illustrations) deals with general botany; the second (pp. 612, with 345 illustrations) with special botany. The first volume follows practically the same outline as in the preceding edition, merely making such additions and corrections as were necessitated by recent research. No acknowledgments are made either for the figures or results of other investigators. While this might escape criticism in the case of familiar figures and statements which have been in common use for twenty years, it would seem no more than just to give credit for recent discoveries. For example, at least an "after Webber" might have been put under Webber's figures of the development of spermatozoids in *Zamia*. Anatomical questions, as in all of Van Tieghem's works are treated in a masterly manner. Morphology and physiology are intimately associated; for instance, the physiology of the root, stem, or leaf immediately follows the morphology of the organ.

The second volume, dealing with special botany, has undergone a decided revision. Instead of recognizing six orders of fungi, the Uredineæ and

²STRASBURGER, NOLL, SCHENCK and SCHIMPER.—Lehrbuch der Botanik für Hochschulen. Dritte verbesserte Auflage. 8vo. pp. viii + 570. figs. 617, in part colored. Jena: Gustav Fischer. 1898. M. 8.50.

³VAN TIEGHEM, PH.: Éléments de Botanique. Troisième Édition, revue et augmentée. Paris: Masson et Cie. 1898.

Ustilagineæ have been included under the Basidiomycetes. In the algæ, bryophytes, and pteridophytes the classification remains unchanged, so far as orders and arrangement are concerned. The name *Astigmatées* appears as a synonym for gymnosperms, and *Stigmatées* for angiosperms. Sweeping changes have been made in the classification of angiosperms. The monocotyls have been divided into four orders, Cyperinées, Joncinées, Liliinées, and Iridinées; but the Graminées, which previously headed the list of monocotyls, are put with the Nymphéinées in a class intermediate between monocotyls and dicotyls, and of equal rank. The Graminées seem to have been taken from the monocotyls on the ground that they have two cotyledons.

The previous classification of dicotyls was into Apetalæ, Dialypetalæ, and Gamopetalæ, each being subdivided into hypogynous and epigynous forms. The present classification is radically different, and here, too, many will hardly admit that there has been an improvement. The dicotyls are divided into two subclasses, the *Inseminées* and *Seminées*. The Inseminées include five orders: Inovulées or Loranthinées, Innucellées or Santalinées, Integminées or Anthobolinées, Unitegminées or Icacinées, and Bitegminées or Heistérinées. The second subclass contains two orders: Unitegminées, a series beginning with the Salicinées and ending with the Compositales; and Bitegminées, a series beginning with the Piperinées and ending with the Cucurbitinées. The book closes with a chapter on plant distribution.—CHAS. J. CHAMBERLAIN.

Medical botany.

STUDENTS of medicine and especially of pharmacy are required to have knowledge of a very large number of plants, widely distributed both in a taxonomic and in a geographic sense. In no other field of botany, perhaps, is the existing condition of things less satisfactory as regards really good textbooks than in pharmacy. The reason for this state of affairs seems to lie in the nature of the subject. To a degree probably nowhere else observed, the subject-matter to be presented consists of unrelated facts, and the student, without aid from any guiding thread of reasonableness, is expected to make himself master of these facts. As a result the work easily becomes tedious and mechanical. In order that as many details as possible may be retained in memory, a frequent repetition of the most important things becomes well-nigh a necessity. For these reasons a book which presents these facts in a brief, pithy style must find large appreciation and use. M. L. Trabut has made an attempt to condense into a small volume⁴ not only the necessary

⁴ TRABUT, L.—Précis de botanique médicale. Deuxième édition. 12mo. pp. 739. figs. 954. Paris: Masson & Cie. 1898.